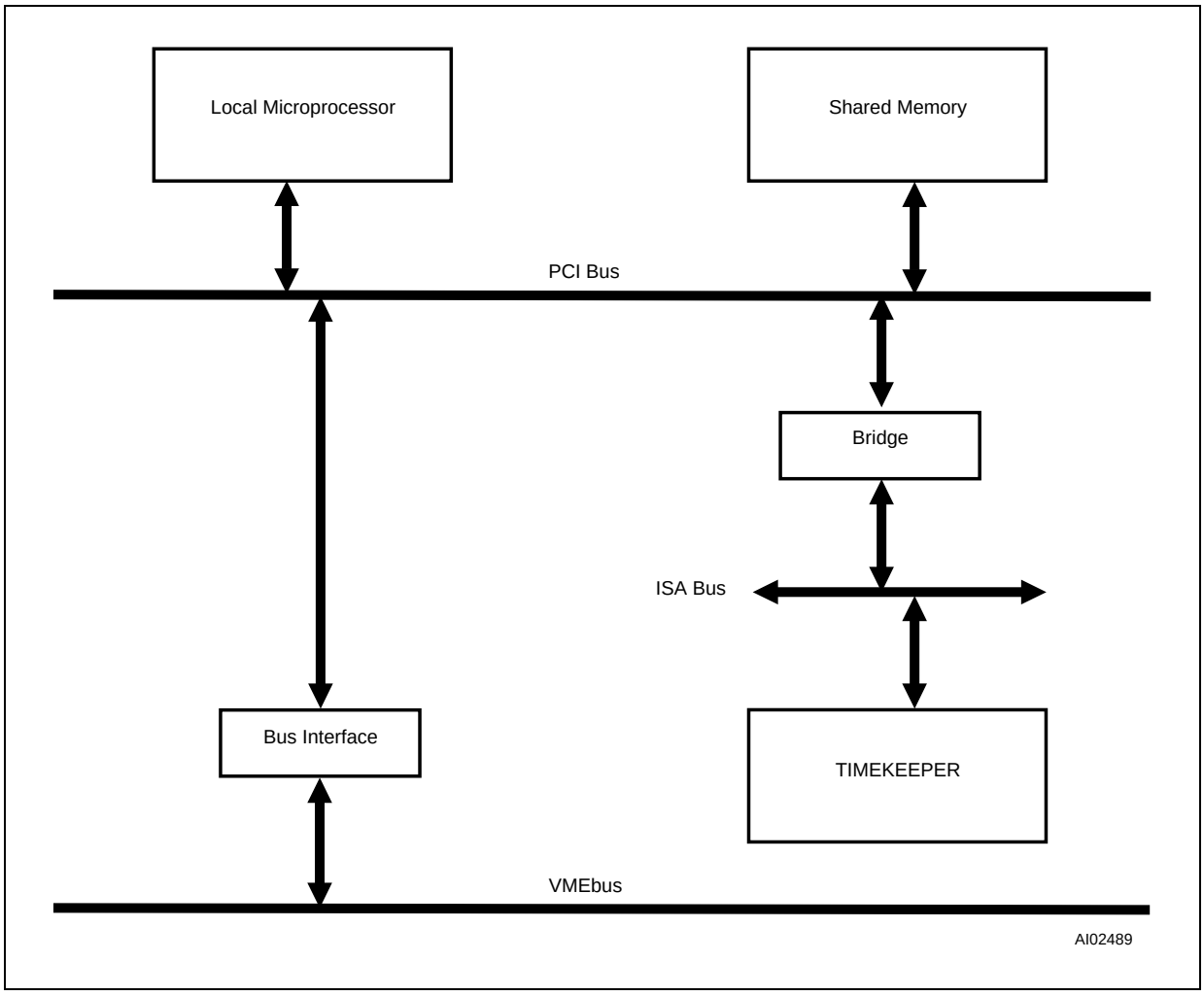
AN968
APPLICATION NOTE

VMEbus TIMEKEEPER Requirements

Surface-mount TIMEKEEPER devices, from STMicroelectronics, are designed explicitly for inclusion on CPU boards. A typical arrangement is shown in Figure 1.

Figure 1. CPU module with a TIMEKEEPER Device



Each member of the TIMEKEEPER family provides support for the following functions:

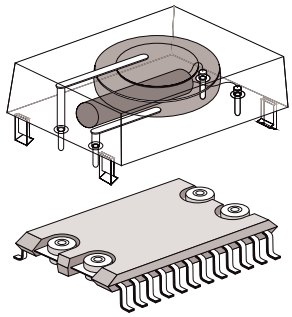
- General timekeeping (i.e. seconds, hour, date, year,...)
- Time stamping (data collection correlated against time)
- Event sequencing during the manufacturing process
- Watchdog (to monitor for processes in the system that are out of control)
- RST: reset signal available for the CPU
- Non-volatile RAM (to store start-up parameters, ethernet address, etc.)

Most of the members of the TIMEKEEPER family (M48T02, M48T18, M48T559, M48T5X and M48T3X) are already being used by manufacturers of VME (Versa Module Eurocard) boards. However, the ones that are best suited for new 'design-in' boards are the M48T59, M48T58 and the M48T559. These have the following features:

- Automatic chip deselect and write protect when the power fails (as described in Application Note *AN1012*)
- BCD coded year, month, day, date, hours, minutes, and seconds (as described in Application Note *AN923*)
- Software calibration for increased clock accuracy (as described in Application Note *AN934*)
- 8K x 8 non-volatile static RAM (as described in Application Note *AN1012*)
- Microprocessor power-on reset (devices with 16-Byte register maps, only) (as described in Application Note *AN924*)
- Battery low warning software bit (devices with 16-Byte register maps, only)
- WDF interrupt function (devices with 16-Byte register maps, only) (as described in Application Note *AN924*)
- Periodic alarms (devices with 16-Byte register maps, only)
- Industry's first fully surface mountable TIMEKEEPER solution (as described in Application Note *AN1019*)
- Industry's smallest non-volatile TIMEKEEPER footprint (as shown in Application Note *AN1019*)
- Address/Address/Data Multiplex (M48T559 only) prevents the need for additional latch circuitry (as described in Application Note *AN967*).

However, the significant feature is that each is available in ST's revolutionary SNAPHAT package: a standard SOIC that is surface mounted in the conventional way, and then is fitted with a SNAPHAT top, as shown in Figure 2, containing the battery and crystal.

Figure 2. SOIC and SNAPHAT Package



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Please remember to include your name, company, location, telephone number and fax number.

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